

CLAIM LIST

1.- 20. (Canceled)

21. (New) A coiled-coil polypeptide comprising the formula $(ab_i c_i d e f_i g_i)_n$, where $i=1,2,\dots,n$, and n is at least three, said polypeptide being prepared by

- (a) independently inserting an amino acid selected from the group consisting of leucine, isoleucine, valine, phenylalanine, methionine, tyrosine, and derivatives thereof, into each of the a and d positions; and
- (b) selecting a solvent-accessible region of an epitope of a selected natural protein, wherein said region is not in a coiled-coil conformation in its native state, and inserting the amino acids from said region into the b_i , c_i , e_i , f_i and g_i positions;

wherein $(ab_i c_i d e f_i g_i)_n$ forms a coiled-coil.

22. (New) The polypeptide of claim 21, wherein a is isoleucine and d is leucine.

23. (New) The polypeptide of claim 21, wherein the coiled-coil polypeptide is comprised of two polypeptide chains arranged in a parallel configuration.

24. (New) The polypeptide of claim 21, wherein n is between about 3 and about 20.

25. (New) The polypeptide of claim 21, wherein n is between about 5 and about 10.

26. (New) The polypeptide of claim 21, wherein the epitopes are selected from α -helical surface regions of a cellular prion protein.

27. (New) The polypeptide of claim 21, wherein the epitopes are selected from exposed surface regions of an infectious prion protein.

28. (New) The polypeptide of claim 26, wherein the sequence formed by the positions $(b_i c_i e_i f_i g_i)_n$ corresponds to the solvent-accessible residues of an epitope having a sequence selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, and SEQ ID NO: 7.
29. (New) The polypeptide of claim 26, wherein the cellular prion protein is selected from the group consisting of mouse, hamster, bovine, ovine and human cellular prion proteins.
30. (New) A coiled-coil polypeptide, comprising an amino acid sequence represented by $(ab_i c_i d e f_i g_i)_n$, where
 $i = 1, 2, \dots, n$, and n is at least three;
 a and d are amino acids each independently selected from the group consisting of leucine, isoleucine, valine, phenylalanine, methionine, tyrosine, and derivatives thereof;
 $(b_i c_i e_i f_i g_i)_n$ is a sequence of amino acids from a solvent-accessible region of an epitope from a selected natural protein, wherein said region is not in a coiled-coil conformation in its native state; and
wherein $(ab_i c_i d e f_i g_i)_n$ forms a coiled coil.
31. (New) The polypeptide of claim 30, wherein a is isoleucine and d is leucine.
32. (New) The polypeptide of claim 30, wherein the coiled-coil polypeptide is comprised of two polypeptide chains arranged in a parallel configuration.
33. (New) The polypeptide of claim 30, wherein n is between about 3 and about 20.
34. (New) The polypeptide of claim 30, wherein n is between about 5 and about 10.
35. (New) The polypeptide of claim 30, wherein the epitopes are selected from α -helical surface regions of a cellular prion protein.

36. (New) The polypeptide of claim 30, wherein the epitopes are selected from exposed surface regions of an infectious prion protein.

37. (New) The polypeptide of claim 35, wherein the sequence formed by the positions $(b_i c_i e f_i g_i)_n$ corresponds to the solvent-accessible residues of an epitope having a sequence selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, and SEQ ID NO: 7.

38. (New) The polypeptide of claim 35, wherein the cellular prion protein is selected from the group consisting of mouse, hamster, bovine, ovine and human cellular prion proteins.